

Remarks

Upon entry of the foregoing amendment, claims 2, 13 and 14 are pending in the application, with claim 2 being the independent claim. Claims 1 and 3-12 are cancelled without prejudice to or disclaimer of the subject matter therein.

Support for amendment to claim 2 can be found in the originally filed claims 1, 2 and 11, and originally filed specification at page 2, lines 10-13. Support for new claim 14 can be found in the originally filed specification at page 2, lines 10-13. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

I. Supplemental Information Disclosure Statement

Applicants note that a Second Supplemental Information Disclosure Statement is submitted accompanying the Amendment and Reply. Applicants respectfully request the Examiner initial and return a copy of Information Disclosure Statement Forms.

II. Rejections under 35 U.S.C. § 103

Claims 1-8 and 11-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ding *et al.* (U.S. Patent Application Publication No. 2005/0197251) ("Ding") in view Uhr *et al.* (U.S. Patent No. 6,828,275) ("Uhr"). Applicants respectfully traverse this rejection.

The cancellation of claims 1 and 3-12 herein renders the rejections to claims 1 and 3-12 moot.

A. Prima Facie Case of Obviousness Has Not Been Established

Amended claims 2 and 13, and new claim 14 are directed to a synergistic composition comprising thiodicarb and imidacloprid, and method of use thereof. The claimed composition requires specific ratios of thiodicarb to imidacloprid.

The Examiner stated that "Ding et al. teach insecticides chloronicotinylns, i.e., imidacloprid, . . . , can be used in combination with thiodicard." (Office Action, page 5.) Applicants respectfully disagree.

Ding discloses a method of controlling the release rate of an agricultural active ingredient from a seed that has been treated with the active ingredient, by coating the treated seeds with a polymer coating. Ding generally discloses that the claimed method is useful for seeds that have been treated by one, or two or more active ingredients, *e.g.*, a growth factor, a growth regulator, a pesticide, or the like (*see* Ding, paragraph 0035). Ding further discloses a laundry list of "suitable" pesticides: pyrethrins and synthetic pyrethroids; azoles, oxadizine derivatives; chloronicotinylns; nitroguanidine derivatives; triazoles; organophosphates; pyrrols; pyrazoles; phenyl pyrazoles; diacylhydrazines; biological/fermentation products; and carbamates (*see* Ding, paragraphs 0036-0048). The exemplary chloronicotinylns include imidacloprid and the exemplary carbamates include thiodicarb (*see* Ding, paragraphs 0040 and 0047). All of the examples in Ding disclose seeds that have been treated by a single active ingredient, not by two or more active ingredients.

Thus, Ding, at most, teaches that seeds may be treated with two or more active ingredients. Ding is silent regarding the specific combination of thiodicarb and imidacloprid as recited in claims 2, 13 and 14 of the present application. As discussed above, Ding generally discloses seeds may be treated with two or more active ingredients. There are millions of possible combinations of pesticides within Ding's disclosure, let alone all other possible combinations of pesticides with growth factors, growth regulators or the like. There is nothing in Ding that would provide a reason for making the specific synergistic composition comprising thiodicarb and imidacloprid as required by claims 2, 13 and 14 of the present application. In addition, Ding does not disclose the ratio of thiodicarb to imidacloprid as required by claims 2, 13 and 14 of the present application.

Contrary to the Examiner's assertion, these deficiencies of Ding are not cured by Uhr.

Uhr discloses a synergistic insecticidal mixture of fipronil and agonists or antagonists of nicotinic acetylcholine receptors of formula (I), and its use for protecting wood from insecticidal attack. One of the specific examples of agonists or antagonists of nicotinic acetylcholine receptors of formula (I) is imidacloprid (*see* Uhr, col. 4, lines 25-29). Thus, Uhr discloses a synergistic insecticidal mixture of ***fipronil and imidacloprid***, which is a completely different composition than that recited in claims 2, 13 and 14 of the present application.

The Examiner stated:

Uhr et al. teach the mixture comprises at least one agonist or antagonist of the nicotinic acetylcholine receptors, can also combine with other insecticides in order to achieve additional

activity against wood-destroying and wood-discoloring fungi, as well as additional synergistic effects or synergism against attack by insects. Examples of additional insecticides that can be admixed include carbamate type of insecticides, i.e. thiodicarb.

(Office Action, page 5)(internal citations omitted).

Uhr generally discloses that the claimed insecticidal mixture, *e.g.*, fipronil and imidacloprid, may optionally include other insecticides and/or one or more fungicides. Uhr lists numerous other insecticides and fungicides (*see* Uhr, col. 10, line 5 through col. 13, line 62). One of the insecticides is thiodicarb (*see* Uhr, col. 10, line 18). However, Uhr does not specifically disclose a synergistic ternary mixture of fipronil, imidacloprid and thiodicarb. There is nothing in Uhr that would provide a reason for making the specific ternary mixture of fipronil, imidacloprid and thiodicarb.

Even assuming, *arguendo*, that Uhr teaches a ternary mixture of fipronil, imidacloprid and thiodicarb, Uhr is silent with respect to the weight ratio of thiodicarb to imidacloprid as required by claims 2, 13 and 14 of the present application. Thus, Uhr does not cure the deficiencies of Ding.

In summary, Ding discloses neither a synergistic composition comprising thiodicarb and imidacloprid, nor the ratio of thiodicarb to imidacloprid as required by claims 2, 13 and 14 of the present application. Uhr does not cure the deficiencies of Ding. Accordingly, for at least these reasons, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness.

B. Synergistic Effect

As described in the specification, the claimed composition showed a synergistic effect against *Phaedon cochleariae*. Specifically, cabbage leaves were treated with

thiodicarb (100 ppm) or imidacloprid (4 ppm) individually and with the claimed composition (100 ppm thiodicarb + 4 ppm imidacloprid), wherein the ratio of thiodicarb to imidacloprid was 25:1 (100 ppm: 4 ppm). The treated cabbage leaves were then infested with larvae of the mustard beetle (*Phaedon cochleariae*). The kill rate of beetle larvae was evaluated after 6 days.¹ (Example B on pages 34 and 36 of the specification.)

As described in the specification, one way to demonstrate synergistic effect of a given composition containing two or more active insecticidal compounds is by comparing the actual insecticidal activity of the composition to the calculated insecticidal activity according to Colby formula. If the actual insecticidal activity is greater than that calculated, then the composition has a synergistic effect. Specifically, for a composition that contains two active insecticidal compounds, the calculated insecticidal activity is:

$$E = X + Y - \frac{X \cdot Y}{100}$$

X denotes the kill rate when using active ingredient A in an application amount of m ppm, Y denotes the kill rate when using active ingredient B in an application amount of n ppm, and E denotes the kill rate when using active ingredients A and B in an application amounts of m and n ppm. (Specification at page 30, lines 8-21.)

In the present application, as shown in the Table B on page 36 of the specification, the actual kill rate of the claimed composition was 80%, which was much greater than the calculated kill rate of 69.75% according to Colby formula. Thus, the claimed composition has a synergistic effect against *Phaedon cochleariae*.

¹ The kill rate is expressed in % of the untreated control, *i.e.*, "0%" means that no beetle larvae were killed, and "100%" means that all of the beetle larvae were killed.

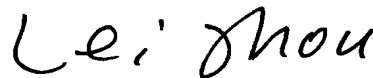
Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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